

WHAT IS CLAIMED IS:

1                   1.     A biopsy localization device comprising:  
2                   a bioabsorbable element in a pre-delivery state prior to its delivery to a soft  
3     tissue biopsy site of a patient; and  
4                   said bioabsorbable element being of a material which is in a post-delivery  
5     state at the biopsy site, the bioabsorbable element being palpably harder than the  
6     surrounding soft tissue at the biopsy site when in the post-delivery state.

1                   2.     The device according to claim 1 further comprising a delivery  
2     device for delivering the bioabsorbable element in the predelivery state to a soft tissue  
3     biopsy site.

1                   3.     The device according to claim 1 wherein the bioabsorbable element  
2     is of a different hardness in the post-delivery state as in the pre-delivery state.

1                   4.     The device according to claim 1 wherein the bioabsorbable element  
2     has a hardness of at least about 1.5 times as hard as breast tissue in the post-delivery state.

1                   5.     The device according to claim 1 wherein the bioabsorbable element  
2     swells about 50 to 1500 percent from the pre-delivery state to the post-delivery state when  
3     placed in contact with an aqueous liquid.

1                   6.     The device according to claim 1 wherein the bioabsorbable element  
2     has a first shape in the pre-delivery state and a second shape in the post-delivery state.

1                   7.     The device according to claim 1 wherein the bioabsorbable element  
2     has one consistency in the pre-delivery state and a different consistency in the post-  
3     delivery state.

1                   8.     The device according to claim 1 wherein the bioabsorbable element  
2     has a longest dimension of at least about 0.5cm when in the post-delivery state.

1                   9.     The device according to claim 1 wherein the bioabsorbable element  
2     made of collagen.

1                   10.    The device according to claim 1 wherein the bioabsorbable element  
2     comprises a therapeutic agent.

1 11. The device according to claim 10 wherein the therapeutic agent  
2 comprises at least a chosen one of a chemotherapeutic agent, a radiation agent and a gene  
3 therapy agent.

1 12. The device according to claim 1 wherein the bioabsorbable element  
2 comprises reservoir means for subsequently receiving a therapeutic agent.

1 13. The device according to claim 12 wherein the reservoir means  
2 comprises reservoir means for receiving a chemotherapy agent.

1 14. The device according to claim 1 wherein the bioabsorbable element  
2 comprises a hemostatic agent.

1 15. The device according to claim 1 wherein the bioabsorbable element  
2 comprises at least one of the following materials: polyactic and polyglycolic acids,  
3 polyorthoesters, resorbable silicones and urethanes, lipids, collagens, polysaccharides,  
4 starches, ceramics, polyamino acids, proteins, hydrogels and other gels, gelatins,  
5 polymers and cellulose .

1 16. The device according to claim 1 wherein the bioabsorbable element  
2 changes from the pre-delivery state to the post-delivery state upon contact with an  
3 aqueous environment.

1 17. The device according to claim 1 wherein the bioabsorbable element  
2 is physically different in its pre-delivery state than in its post-delivery state.

1 18. The device according to claim 1 wherein the bioabsorbable element  
2 comprises a bioabsorbable filament.

1 19. The device according to claim 1 further comprising a marker  
2 element located generally centrally within the bioabsorbable element.

1 20. The device according to claim 19 wherein the marker element is a  
2 radiopaque marker element.

1 21. The device according to claim 19 wherein said marker element  
2 comprises a chosen one of a permanent marker element and a temporary marker element.

1                   22.    A biopsy localization method comprising:  
2                   taking a tissue sample from a biopsy site within a patient;  
3                   positioning a bioabsorbable element at the biopsy site at the time of the  
4 taking of the tissue sample;  
5                   testing the tissue sample; and  
6                   if the testing indicates a need to do so relocating the biopsy site by finding  
7 the bioabsorbable element.

1                   23.    The method according to claim 22 wherein the positioning step is  
2 carried out using said bioabsorbable element and a radiopaque marker.

1                   24.    The method according to claim 23 wherein the relocating step is  
2 carried out using a radiographic technique.

1                   25.    The method according to claim 23 wherein the positioning step is  
2 carried out using a chosen one of a permanent radiopaque marker and a temporary  
3 radiopaque marker.

1                   26.    The method according to claim 22 wherein the relocating step is  
2 carried out by at least one of:  
3                   palpation of the patient to feel the bioabsorbable element;  
4                   locating inflammation at the biopsy site caused by the bioabsorbable  
5 element;  
6                   following a bioabsorbable thread, the thread extending from the patient's  
7 skin to the bioabsorbable element; and  
8                   remotely visualizing the bioabsorbable element.

1                   27.    The method according to claim 26 wherein the remotely  
2 visualizing step is carried out by at least a chosen one of ultrasound, MRI and  
3 mammography.

1                   28.    The method according to claim 22 wherein the tissue sample taking  
2 step is carried out using a needle biopsy technique.

1                   29.    The method according to claim 22 wherein the tissue sample taking  
2 step is carried out using a surgical excisional biopsy technique.



1                   38.     The method according to claim 37 wherein the flowable  
2 bioabsorbable element injecting step is carried out using a biopsy needle.

1                   39.     The method according to claim 22 further comprising the step of  
2 changing the bioabsorbable element from a pre-delivery state prior to the positioning step  
3 to a post-delivery state after the positioning step.

1                   40.     The method according to claim 39 wherein the changing step is  
2 carried out by at least one of the following: hydration, changing temperature, electrical  
3 stimulation, magnetic stimulation, chemical reaction with a first additional material,  
4 physical interaction with a second additional material, ionization, absorption and  
5 adsorption.

1                   41.     The method according to claim 27 further comprising the step of  
2 placing a marker element at a generally central location within the bioabsorbable element  
3 at the target site.

1                   42.     The method according to claim 41 wherein the placing step takes  
2 place simultaneously with the positioning step.

1                   43.     The method according to claim 41 wherein the placing step is  
2 carried out using a radiopaque marker element.

1                   44.     The method according to claim 41 wherein the biopsy site  
2 relocating step comprises the step of remotely visualizing the marker element.

1                   45.     A medical treatment method comprising:  
2 taking a tissue sample from a biopsy site within a patient;  
3 positioning a bioabsorbable element at the biopsy site at the time of the  
4 taking of the tissue sample;  
5 testing the tissue sample;  
6 if the testing indicates a need to do so, and medically treating the biopsy  
7 site.

1                   46.     The method according to claim 45 wherein the medically treating  
2 step comprises activating an agent carried by the bioabsorbable element.

1           47.    The method according to claim 46 wherein the activating step is  
2 carried out by at least one of:  
3           injecting a radiation-emitting element at the vicinity of the target site;  
4           externally irradiating the target site; and  
5           providing a triggering substance to the agent.

1           48.    The method according to claim 45 wherein the medically treating  
2 step comprises delivering a therapeutic agent to the target site.

1           49.    The method according to claim 48 wherein the delivering step is  
2 carried out using at least one of:  
3           a chemotherapy agent;  
4           a radiation-emitting element;  
5           thermal energy;  
6           ionization energy;  
7           gene therapy;  
8           vector therapy;  
9           electrical therapy;  
10          vibrational therapy; and  
11          anti-angiogenesis.

1           50.    The method according to claim 45 further comprising the step of  
2 relocating the biopsy by finding the bioabsorbable element.

1           51.    The method according to claim 50 wherein the relocating step is  
2 carried out prior to the medically treating step.

1           52.    The method according to claim 51 wherein the medical treating  
2 step comprises removal of tissue.